Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
	)	
Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared Between the Fixed Service and the Fixed Satellite Service	)	RM-11778

REPLY COMMENTS OF NOVELSAT

NovelSat Inc. ("NovelSat") submits these reply comments in response to the comments filed on the Public Notice in the above-referenced proceeding that requested focused additional comments on enabling terrestrial use of the 3.7-4.2 GHz band ("C-band").

1. Satellite transmission efficiency

Today, broadcast content distribution and contribution typically utilize DVB-S2 standard that was formally published in 2005. Since then, major developments and enhancement in the industry led to the formulation of a more efficient successor that was standardized as DVB-S2X in 2014. In comparison to DVB-S2X, DVB-S2X supports significantly higher spectral efficiency – up to 30% more - for professional applications such as broadcasting. In parallel, additional waveforms were developed by commercial companies, enabling significantly higher spectral efficiencies than DVB-S2X, and are widely used for broadcasting applications outside of the US. Transitioning from the current DVB-S2 to one of these high efficiency waveforms will enable to decrease up to 50% of the spectrum required for the delivery of current broadcasting services.

2. Video coding efficiency

Today, the commonly used standard for the recording, compression, and distribution of video content is H.264 or MPEG-4 Part 10, Advanced Video Coding (MPEG-4 AVC) that was introduced in 2003. Since then, major developments and enhancement in the industry led to the formulation of a more efficient successor that was standardized as High Efficiency Video Coding (HEVC) or H.265 in 2013. In comparison to AVC, HEVC offers from 25% to 50% better data compression at the same level of video quality. In addition, HEVC also supports higher resolutions including 8K UHD. Transitioning from the current H.264 to high efficiency coding formats will enable to decrease up to 50% of the spectrum required for the delivery of current broadcasting services.

Conclusion

The best way to achieve major C-band repurposing for next-generation wireless technologies, is by adopting and employing higher efficiency satellite transmission and video coding technologies over the remaining C-band spectrum allocated for earth station users. Such technologies and solutions enable to continue to utilize satellite delivery in a significantly reduced frequency band – up to 75% less spectrum of the current C-band. In addition, these technologies are commercially available and field proven, mitigating uncertainties and risks.

As such, compensation for earth station users should be used primarily for funding the transition to higher spectral efficiency technologies, resulting in (a) clearing a larger portion of the C-band spectrum; (b) protecting the future use of satellites in C-Band to distribute content; (c) supporting programmers and broadcasters readiness for UHD broadcasting; (d) immediate lower investments and delaying, per market growth, additional investments in building new satellites or transitioning to fiber networks; and (e) significantly faster overall process in comparison to building new satellites or transitioning to fiber networks.

Transitioning to higher spectral efficient technologies addresses the key concerns of the major C-band users and offers a better economic viability. Before adopting the CBA or the ACA/Charter/CCA Proposals, we urge the Commission to adequately consider the alternatives raised herein.

Respectfully submitted,

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